Space Weather Forecast

Issued on Monday, 07 November 2022 at 00:43 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

Space Weather Forecast Headline: Slight chance of G1/minor storms. Chance of M-class flares (R1; Minor radio blackouts).

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low through the last 24 hours, with several common class flares. There are six numbered active regions, which are mainly covering the northern hemisphere. A large region in the northeast, and two moderately sized spots with one in the northeast, and the second in the northwest. The remaining spots are small and simple. No Earth-directed coronal mass ejections have been observed.

Solar Wind / Geomagnetic Activity: The solar wind is showing a declining influence from coronal hole 39 with speeds easing from slightly elevated to slow-ambient. Total magnetic field strength has been weak. The north-south component has varied weakly. Geomagnetic activity was observed to be at Quiet levels (Kp 0-1).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) remained at background levels with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is forecast to be Low, with a 40% chance of Moderate activity.

Solar Wind / Geomagnetic Activity: No Earth directed coronal mass ejections feature in the forecast. Winds are now slow-ambient. Coronal hole 40 or 42 may connect with the Earth during day 2 (8th), although there is low confidence in strength. There is a chance that the Earth may connect to coronal holes 41 or 43 on days 3 or 4 (9th or 10th), however their impact on the Earth is expected to be minimal. Geomagnetic activity is expected to be mainly Quiet with some Unsettled intervals possible at times. There is a slight, perhaps increasing chance of Active or G1/Minor Storm intervals through the period due to successive arrivals of coronal hole high speed streams.

Energetic Particles / Solar Radiation: The count rate of energetic particles (High energy protons) is forecast to persist at background with no solar radiation storms occurring.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	10	15	20
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	40	40	40	40
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	1	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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